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The Braille →

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Dr. John Morrison uses the Braillemboss to receive output from a time-shared computer.

A NOVEL DEVICE is becoming available which may make possible new occupational opportunities for the blind. It is the braille embosser terminal, the braille equivalent of the teletypewriter, computer terminal, and stock ticker which, in most cases, display their information either in print or on TV-like screens.

Today there are hundreds of thousands of printing or TV-screen terminals in the U.S. being used in an extremely wide variety of applications. Some are used to transmit and receive written communications. Documents (such as telegrams, Telex messages, freight waybills) and information between the many branches of some companies are transmitted and received by such terminals. The communication networks of the world news services use them for transmitting stories and articles. These chattering terminals often provide the background during daily news broadcasts.

More recently, such terminals have made possible instantaneous access to computers. Computer programers, engineers, and mathematicians employ them for entering programs and data into the computer and for receiving the computer's output. Now, however, they are used even more widely in everyday clerical activities in which records stored in computers are entered and accessed. The service representatives at a utility company can check a bill, an insurance agent can review the status of a policy, or the Internal Revenue Service can examine a return by retrieving records through these terminals. Airline, auto, hotel, and ticket reservations are made instantly. Merchants verify credit card accounts by phoning verification centers where clerks access computer account records. These are but a few of the many applications and hundreds of thousands of jobs are made possible by such terminals.

With the development of computer programs and electronic circuits for rapidly translating inkprint into braille, some means of printing the translated braille output was required. The conventional braillewriter and other braille production equipment—even when electrified or automated—were not rapid enough or convenient enough. What really was needed was a braille equivalent of the conventional terminal.

After years of research, funded primarily by SRS and, in the later

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Embosser Terminal: Creating New Jobs for the Blind

stages, by private foundations, an automatic braille embosser terminal, the Braillemboss, was introduced by the Sensory Aids Evaluation and Development Center, Massachusetts Institute of Technology. This device was designed specifically for use as a computer and communications terminal.

Embosser Applications

Although the Braillemboss concept is relatively new, the value of the braille page embosser in creating or improving employment opportunities for the blind has already been demonstrated. One of the first uses of the Braillemboss for employment activities was by Dr. John Morrison, a blind mathematician at the Department of Transportation Systems Center in Cambridge, Massachusetts. Dr. Morrison frequently uses the computer for performing mathematical analyses. Prior to the Braillemboss, he relied upon sighted persons to read to him the results of his computer programs, a procedure which was highly unsatisfactory compared to the almost instantaneous access which his colleagues had to the computer via teletypewriter terminals.

"For a blind scientist," Dr. Morrison says "the time-sharing capability of computers is absolutely useless without a braille output device to reproduce the teletype output. It was my good fortune that when the time-sharing facility became available to me, almost simultaneously the MIT brailler was put at my disposal for evaluation purposes. From a purely personal point of view, I cannot emphasize enough the almost unanticipated boost in morale the brailler has afforded me. For the first time I can access the computer directly and, for the first time, I can read the results of my labor. . . .

"From the point of view of a productive worker, my contribution to the inhouse effort has kept pace with my colleagues, which would not have been the case had I not had the brailler at my disposal. I consider it an indispensible instrument for my work. . . .

"The potential uses for the brailler are by no means limited to my particular applications. The least that can be said is that whatever is available to a sighted person through a teletypewriter is available to a blind person through the addition of a brailler."

Paul Caputo reads newswire copy from Braillemboss.

Other blind computer programers have since found the Braillemboss equally valuable in their jobs.

Dr. Morrison also uses the Braillemboss to edit papers which he writes. The paper is typed on a teletypewriter terminal which provides the printed copy while a braille copy is produced on the Braillemboss.

Mr. Paul Caputo was able to obtain a job as a TV newscaster at a Springfield, Massachusetts television station with the help of a Braillemboss provided by the Massachusetts Commission for the Blind. The newswire copy normally used by broadcasters is produced on teletypewriters. Mr. Caputo's copy was produced in braille by direct substitution of the Braillemboss for the teletypewriter.

The braille page embosser has increased the employment capabilities of blind taxpayer service representatives (TSR) at the U.S. Internal Revenue Service. Until recently, the blind TSRs served primarily to answer questions on the tax code and regulations; sighted help was needed to retrieve data on taxpayer accounts. However, for TSR Jack McSpadden in the Little Rock, Arkansas District Office, a Braillemboss now has significantly reduced his dependence upon sighted help. Mr. McSpadden accesses the computerized taxpayer records just as his sighted colleagues do, via a keyboard terminal which displays the results on a TV-like screen. However, instead of reading the screen or using the paper copy which comes from a teletypewriter terminal, he obtains his copy from a Brailemboss.

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Mr. McSpadden is now performing virtually all the functions that his sighted coworkers perform, and, as a result, the IRS is considering making embossers available to over 40 braille-using blind persons now employed as TSRs. Other government agencies such as the Social Security Administration and the Veterans Administration are also investigating similar applications.

These are but three examples of applications for the braille page embosser; there are many other opportunities which can be opened to the blind. In addition, the embosser can be used to print braille copies of memos, reference material, journals, and other reading matter either directly in grade-1 braille or in contracted grade-2 braille through the use of a computerized braille translation program.

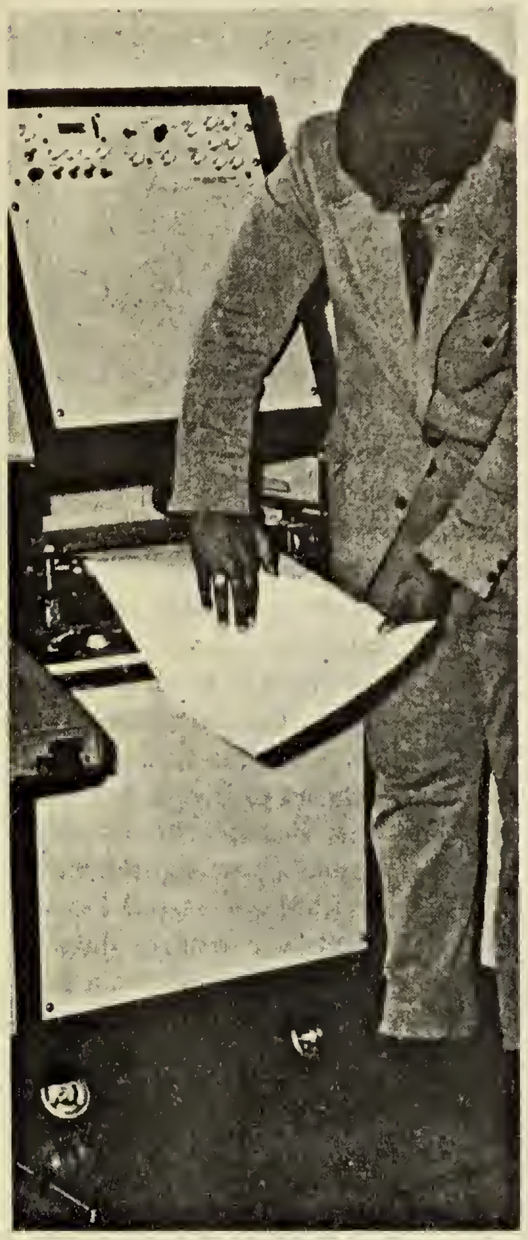
Future Opportunities

The embosser is no longer an experimental device; the equipment is ready for commercial exploitation. In addition to the MIT device, a braille page embosser has been developed by Triformation Systems, Inc. of West Henrietta, New York and by Mr. Norman Loeber at the IBM Corporation in San Jose, California. Needed now are job openings for the blind in which the embosser can be used.

The braille page embosser may make possible the employment of blind people in government service, airlines, hotel reservation systems, credit verification activities, utilities, and in the multitude of other "terminal-based" positions. As the use of computerized record keeping systems continues to grow, the demand for personnel and programers to man these systems should be high. It is now time for rehabilitation and agency personnel to explore the application of the embosser to employment for the blind and to inform potential employers of the tasks which blind workers can perform if this equipment is made available.

Note

The Sensory Aids Analysis and Development Program of the American Foundation for the Blind can provide additional information on the devices and applications mentioned here. The program is also prepared to assist agency and rehabilitation personnel in exploring potential employment opportunities based on this and other sensory aids and in discussing with potential employers the application of these sensory aids. Please address requests to the Sensory Aids Analysis and Development Program, American Foundation for the Blind, Inc., 199 Sudbury Road, Concord, Massachusetts 01742. Tel. 617/369-5500.



Photos below and at left show IRS taxpayer service representative, Jack McSpadden, requesting and receiving taxpayer records in braille form.